ONTARIO ENERGY BOARD

EB-2017-0224
EB-2017-0255
EB-2017-0275

IN THE MATTER OF the *Ontario Energy Board Act*, 1998, S. O. 1998, c. 15, Schedule B;

AND IN THE MATTER OF an applications for approval of the cost consequences of cap and trade compliance plans

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SUBMISSIONS OF ENVIRONMENTAL DEFENCE

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Overview

1. Gas consumers will pay at least $36 million in unnecessary costs because Enbridge Gas Distribution Inc. ("Enbridge") and Union Gas Limited ("Union") have not developed cost-effective cap and trade compliance plans for 2018. This $36 million estimate was developed by Chris Neme based on "very conservative" assumptions – the actual cost could be much higher.

2. The utilities plans completely exclude ratepayer-funded customer abatement even though the Board's Marginal Abatement Cost Curve ("MACC") shows that customer abatement comes at a *negative* cost per tonne of avoided carbon emissions.[1] Instead of implementing the least-cost option (incremental conservation), the utilities meet their compliance obligations exclusively by purchasing carbon instruments. These purchases are forecast to cost $668 million in 2018 alone.[2]

3. The utilities misuse the MACC to argue against incremental conservation. That tool is intended to compare the cost per tonne of abatement options for prioritization purposes – not to conclusively determine the potential gas savings of each abatement option (see paras. 31 to 36 below). The MACC and other Board-developed tools, when used for their stated purposes, show there are many conservation opportunities that are (a) far more cost-effective than purchasing carbon instruments and (b) far better at reducing risk (as a hedge against gas and carbon price fluctuations). Based on Chris Neme's analysis and very conservative assumptions, the utilities could achieve 50% to 100% more gas savings through cost-effective conservation.

4. The utilities do not plan to propose incremental conservation as a compliance option in 2019 and 2020 either.[3] This undermines the entire cap and trade regime. Cap and trade is intended to change behaviour in part through carbon price signals. The utilities are

[1] ICF International, *Marginal Abatement Cost Curve*, July 20, 2017 p. 14.
[2] Union Ex. 7-1-1, p. 1 & Ex. 3-5, p. 4 [$283 million]; Enbridge Ex. G-1-1, att. 1, p. 1-2 & Ex. D-1-1, p. 1 [$385 million]; For confirmation of these figures see: Transcript vol. 2, p. 58, lns. 2-8; Transcript vol. 3, p. 147, lns. 12-16.
[3] EB-2017-0244/0255 Transcript Vol. 2, p. 95, ln. 22 to p. 96, ln. 6; Exhibit B.GEC.22, p. 2; Exhibit I.1.EGDI.OSEA.11; Union Correspondence to the Board Dated May 16, 2018; Enbridge Correspondence to the Board Dated May 18, 2018.

ignoring these price signals by not implementing conservation even though it is far less expensive than purchasing instruments.

5. Much of the conservation available this year will not be available in future years.[4] Therefore, many tens of millions of dollars will be *permanently* lost and customers will pay far more for their gas than is necessary without the ability to make up for these lost opportunities in the future.

Key Benefits of Conservation

Lowering Energy Bills

6. Cost-effective conservation should be a major part of any cap and trade compliance plan because it reduces costs and risks for gas consumers.

7. Collectively, the utilities have achieved over **$5 billion** in net savings for their consumers though conservation programs.[5] These are **net** benefits, after subtracting the cost of the conservation measures and reducing the gross benefits by an assumed free rider rate.[6] These benefits have also been **audited** through the Board's rigorous processes.[7]

8. The $5 billion in net benefits is realized through reduced gas usage and lower energy bills. The principle is extremely simple: $1 invested in cost-effective conservation programs produce much more than $1 in reduced energy costs.

9. The utilities' conservation programs have achieved roughly 40 million tonnes of carbon reductions.[8] These carbon reductions were "free." The conservation measures resulted in energy savings that eclipsed the cost of the measures themselves by $5 billion. In other words, the carbon reductions were a by-product that were not accounted for in the net benefit analysis.

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[4] See paras. 20 to 22 for details.
[5] Union Exhibit B.ED.22; Enbridge Exhibit I.1.EGDI.ED.22; Transcript vol. 3, p. 133, lns. 5-9.
[6] OEB, *Filing Guidelines to the 2015-2020 DSM Framework*, p. 26-31.
[7] *Ibid.*
[8] Enbridge, *2016 CSR & Sustainability Report*, April 17, 2017, p. 98 [http://www.enbridge.com/~/media/Enb/Documents/CSR/Reports/2016_CSR_Report.pdf?la=en] (Enbridge's programs have achieved 19.4 million tonnes of carbon reductions. Union's programs can be assumed to have created at least a similar amount as they have produced more net benefits (see footnote 5). However, these are conservative figures as they "do not even include the gas savings that will be achieved for decades into the future as a result of past efforts.")

10. Enbridge describes these benefits in its CSR report:

> Cumulatively, between 1995 and the end of 2015, EGD's DSM programs saved about 10.3 billion cubic meters of natural gas and reduced carbon dioxide equivalent emissions by 19.4 million tonnes. These reductions are similar to those that would be achieved by taking about 3.8 million cars off the road for a year or by meeting the natural gas needs of about 4.3 million homes for a year. These reductions have created net benefits to society worth about $2.6 billion. For a utility that delivers just over 11 billion cubic meters of natural gas to its customers in an average year, the savings achieved to date are significant, and do not even include the gas savings that will be achieved for decades into the future as a result of past efforts.[9]

11. Cost-effective conservation can be hugely profitable. It is much preferable to the expensive alternative of purchasing carbon instruments. This year alone, the utilities expect to spend **$668 million** on carbon instruments.[10]

Reducing Risk

12. Cost-effective conservation reduces gas and carbon price risk by reducing gas consumption and carbon emissions for many years into the future (e.g. for the lifetime of high-efficiency equipment). Conservation is an effective hedge against future gas and carbon price increases by locking in a low fixed price for gas and carbon reductions for many years.[11] Consumers are protected from future price increases in relation to every cubic metre of gas savings and every tonne of carbon emissions saved by conservation.

13. As part of a portfolio of compliance options, conservation also reduces risk trough diversification.

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[9] *Ibid.*
[10] Union Ex. 7-1-1, p. 1 & Ex. 3-5, p. 4 [$283 million]; Enbridge Ex. G-1-1, att. 1, p. 1-2 & Ex. D-1-1, p. 1 [$385 million]; For confirmation of these figures see: Transcript vol. 2, p. 58, lns. 2-8; Transcript vol. 3, p. 147, lns. 12-16.
[11] Transcript vol. 4, p. 98, lns. 12-27.

Impact of Excluding Conservation in 2018 Plans

At Least $36 Million in Energy Bill Increases

14. In Chris Neme's expert opinion, the utilities could have saved consumers $36 million by including only a modest amount of conservation in their 2018 cap and trade plans.[12] This is a very conservative estimate because:

    a. The analysis assumes the utilities are already achieving the saving levels in the Board's Conservation Potential Study's "constrained scenario," when in fact they are achieving much less because the utilities' plans are not optimized for gas savings;[13]

    b. The analysis assumes that the utilities will achieve only *half* of what the Conservation Potential Study says it is possible to achieve by moving from the constrained scenario (with status quo budget levels) to the semi-constrained scenario (with a moderate budget increase);[14]

    c. The analysis is based on the cost-effectiveness test used in the Conservation Potential Study (the TRC test), which is more stringent than the Utility Cost Test (UCT) used in the Cap and Trade Framework;[15] and

    d. The analysis assumed flat carbon prices beyond 2028 (the last year in the Board's Long-Term Carbon Price Forecast) even though continued increases will occur.[16]

15. Because of the very conservative assumptions used by Mr. Neme, his analysis cannot not be faulted for overestimating the expected conservation potential and the actual conservation levels and net benefits would likely be higher.

16. The cost of excluding conservation can also be examined with the utilities own figures. To take Enbridge as an example, its 2018 conservation programs under the DSM Framework are expected to achieve $262 million in net gas and carbon reduction benefits according to the cost-effectiveness test used under the Cap and Trade Framework (the

[12] Evidence of Chris Neme, March 19, 2018, Exhibit L, p. 33-34; See also Mr. Neme's response to Staff Interrogatory #1 (Ex. GEC/ED.STAFF.1).
[13] Evidence of Chris Neme, March 19, 2018, Exhibit L, p. 32; JT2.15; JT2.5.
[14] *Ibid*, pp. 25 &33.
[15] *Ibid.*
[16] *Ibid.*

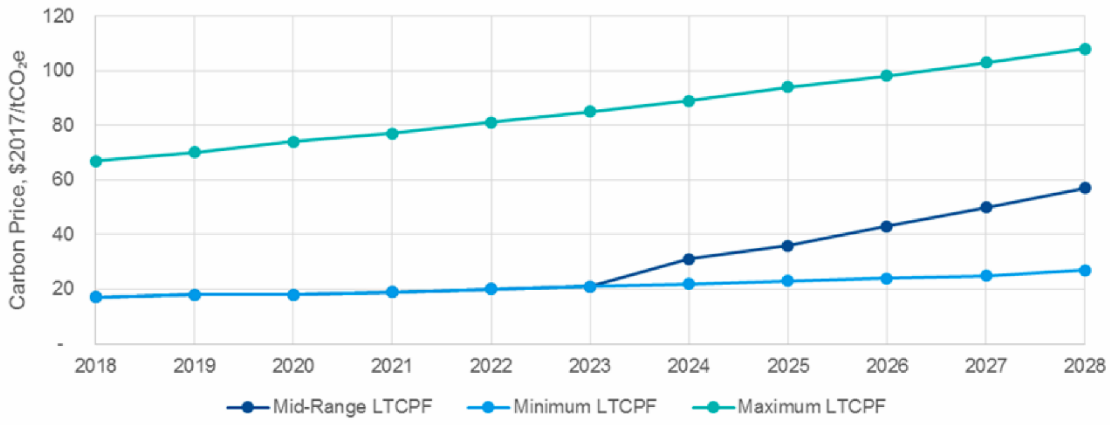
UCT). All else equal, if Enbridge increased its 2018 programs by a mere 10% (both budget and m3 savings), this would have generated an additional $26 million in net gas and carbon savings for this one utility.[17] These figures help to confirm that Mr. Neme's conclusions are conservative.

Exposure to Large Unnecessary Risks

17. The utilities have exposed customers to unnecessary gas and carbon price risks by excluding conservation from their cap and trade plans. The above estimate of the $36 million impact of excluding conservation from the 2018 plans is based on the mid-range of the Board's Long-Term Carbon Price Forecast. However, that forecast also discusses a much higher cost scenario, as shown below.[18] If something closer to the maximum scenario comes to pass, the true cost of excluding conservation from the utilities plans will be far higher.

LTCPF Results

Ontario Carbon Price Forecast Scenarios (Graph) Expressed in Real 2017 CAD $/tCO$_2$e



Ontario Carbon Price Forecast Scenario Results Expressed in Real 2017 CAD $/tCO$_2$e

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Mid-Range LTCPF	17	18	18	19	20	21	31	36	43	50	57
Minimum LTCPF	17	18	18	19	20	21	22	23	24	25	27
Maximum LTCPF	67	70	74	77	81	85	89	94	98	103	108

[17] This assumes that the incremental conservation can be achieved as cost-effectively as the existing conservation programs. This is reasonable to assume because the current programs are not optimized for gas/carbon savings and include spending on market transformation (see Transcript vol. 3, p. 158, ln. 15 to p. 159, ln. 2). In contrast, incremental carbon-price-driven conservation would be optimized and focused on programs that acheive the lowest cost per avoided tonne of carbon.

[18] ICF International, *Long-Term Carbon Price Forecast*, July 19, 2017, p. 4.

18. Another possible scenario is that Ontario scraps the cap and trade regime and instead becomes subject to the federal carbon price backstop. This would cause a huge jump in carbon prices. For example, in 2020, the carbon price could increase from $20 (forecast under the cap and trade regime) to $50 under the federal carbon price backstop.[19] That is more than 2.5 times the mid-range scenario in the Board's forecast. This year, at $18/tonne, carbon instruments will cost $668.[20] In 2020, at $50/tonne, the cost could be somewhere in the range of $1.7 billion a year.[21]

19. The utilities could have hedged against that risk by implementing conservation that effectively locks in a low fixed price for gas and carbon emission reductions. They chose not to do so.

Lost Opportunities

20. By not implementing incremental conservation, Ontario has lost conservation opportunities that will no longer be available in the future. This concept is described in the Board's DSM filing guidelines as follows:

> Lost opportunity markets refer to DSM opportunities that, if not undertaken during the current planning period, will no longer be available or will be substantially more expensive to implement in a subsequent planning period. An example of preventing a lost DSM opportunity would be improving the thermal envelope of a building at the time the building is undergoing unrelated major renovation work.[22]

21. Another example of lost opportunities are customers that replace equipment with inefficient models because of a lack of incentives or marketing. The unnecessary future gas and carbon costs associated with this inefficient equipment will persist until the equipment needs replacing again because energy efficiency upgrades are often only cost-effective when equipment requires upgrading for other purposes.

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[19] Transcript Vol. 3, p. 149, ln 21 to p. 150, ln. 3 [for 2020, the Long-Term Price of Carbon Forecast predicts $20/tonne under cap-and-trade whereas the federal carbon price backstop would be $50/tonne].
[20] Union Ex. 7-1-1, p. 1 & Ex. 3-5, p. 4 [$283 million]; Enbridge Ex. G-1-1, att. 1, p. 1-2 & Ex. D-1-1, p. 1 [$385 million]; For confirmation of these figures see: Transcript vol. 2, p. 58, lns. 2-8; Transcript vol. 3, p. 147, lns. 12-16.
[21] Calculation: 2.5 times the 2018 carbon instrument purchasing cost of $668 million.
[22] Ontario Energy Board, *Filing Guidelines to the 2015-2020 DSM Framework*, EB-2014-0134, p. 14.

22. Ontario cannot "play catch-up" for the conservation opportunities lost this year. Many of these opportunities are being lost each day, adding up to multi-million dollar lost opportunities for gas customers.

Large Cost-Effective Conservation Potential

23. The utilities could be implementing far more cost-effective conservation. They cannot defend their exclusion of conservation based on any actual limits on the availability of cost-effective conservation. This is clear from the evidence of Chris Neme, the MACC, the Board's Conservation Potential Study, and the utilities' own admissions.

Chris Neme's Evidence

24. In Chris Neme's professional opinion, the utilities could increase conservation savings by between 50% and 100%.[23] Mr. Neme's opinion is based on his decades of experience in gas conservation internationally, his decades of experience with this Board's conservation processes, and his review of the relevant materials.[24] Mr. Neme noted that:

    a. The Board's **Conservation Potential Study** shows that the Enbridge could achieve 50% to 132% more conservation savings, all of which would be cost effective.[25] The savings potential depends on the size of the additional budget and the ability to optimize the incremental conservation.[26] An even greater amount would be available under the Utility Cost Test used under the Cap and Trade Framework versus the "TRC" test under the DSM Framework.[27]

    b. **Benchmarking studies** show that comparable jurisdictions achieve far more conservation savings as a percent of sales (e.g. two times the savings achieved by Enbridge).[28]

[23] Evidence of Chris Neme, March 19, 2018, Exhibit L, p. 27.
[24] *Ibid*. pp. 2-5.
[25] *Ibid*. pp. 24-25 (the range for Union is 25% to 75%).
[26] *Ibid*.
[27] *Ibid*. p. 25; see also paras. 41 to 43 below.
[28] *Ibid.* at p. 26 (comparable jurisdictions achieve savings that are 1/3 higher than Union's).

c. **Customer participation rates** for the utilities' programs are low.[29] In some cases the planned market penetration rate is as low as 5% of customers.[30] Increased customer participation (which translates into increased conservation) can be achieved with better customer incentives, marketing, and program design.[31]

25. Mr. Neme also analyzed the MACC in much more detail than the utilities. For example, Mr. Neme spoke and emailed with the authors of the MACC to confirm his understanding of key assumptions (e.g. whether savings were net vs. gross, customer scope, etc.).[32] The utilities did not take even this step.

26. Mr. Neme uncovered two fundamental flaws in the utilities' analyses.[33] The utilities assumed that the MACC had not reduced the conservation potential to account for free riders and for customers with their own compliance obligations. In fact, these reductions were already accounted for. As a result, the utilities incorrectly applied further reductions to the MACC results.[34]

27. Mr. Neme's conclusion that the utilities could increase conservation savings by between 50% and 100% is robust and reasonable because it incorporates and reconciles multiple sources of information. These multiple sources reinforce each other and lead inexorably to the conclusion that much more cost-effective conservation is available.

Utilities' Own Admissions

28. On cross-examination, the utilities' own staff acknowledged that additional cost-effective conservation is available. For example, Board Staff asked whether each utility could find cost-effective conservation if they were provided with an additional $5 million. Both utilities' witnesses acknowledged that they likely could.[35]

29. As another example, Enbridge acknowledged in an undertaking response that the Board's Conservation Potential Study found far more potential savings than Enbridge is targeting

[29] *Ibid.*
[30] *Ibid.*
[31] Transcript, vol. 4, p. 69, ln 3; p. 96, ln. 15
[32] Exhibit GEC/ED.EGDI.2, attachments.
[33] Evidence of Chris Neme, March 19, 2018, Exhibit L, pp. 14-16 (Re Enbridge) & 19-20 (Re Union).
[34] *Ibid.*
[35] Transcript, vol. 2, p. 171, lns. 15-23; Transcript vol. 4, p. 42, ln. 27 to p. 43, ln. 9.

in its existing DSM plan. Based on Enbridge's own assumptions, the Conservation Potential Study found that Enbridge's 2018 conservation savings could be increased by 24% with only the moderate budget increases under the study's "semi-constrained" scenario (without increasing the spending per m3 of gas savings).[36] If Enbridge's additional and unwarranted net-to-gross ratio is subtracted out, the incremental savings potential jumps to 70% with a moderate budget increase (and to 138% including all achievable and cost-effective measures).[37]

Rebuttal of Utility Arguments

30. The utilities seem to argue that cost-effective conservation is available under the DSM Framework but not the Cap and Trade Framework. This position is contradictory and incorrect.

MACC Shows that Conservation is Highly Cost-Effective

31. The utilities argue that the MACC conclusively states that there is no incremental cost-effective conservation available, and therefore no conservation can be implemented under the Cap and Trade Framework. This is a complete misreading of the purpose of the MACC. The MACC is intended to prioritize between abatement options and for benchmarking. It is *not* meant to determine the gas savings potential for each abatement option for each utility.

32. The purpose of the MACC was clearly communicated to the utilities by the Board in its covering letter with the MACC. The letter stated:

> The MACC provides a basis for comparison of the relative cost-effectiveness of a range of GHG abatement activities. The OEB adopts the MACC for its stated purpose.[38]

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[36] Enbridge Ex. JT2.5 (See also Environmental Defence Compendium, p. 48). The mathematical calculations in the tables on page 48 were confirmed by Enbridge's witness in Transcript vol. 4, p. 159, lns. 23 to 26.

[37] Enbridge Ex. JT2.5 (See also Environmental Defence Compendium, p. 48). The mathematical calculations in the tables on page 48 were confirmed by Enbridge's witness in Transcript vol. 4, p. 159, lns. 23 to 26; Re the net-to-gross issue see ICF International, *Natural Gas Conservation Potential Study*, July 7, 2016, prepared for the Ontario Energy Board, p. 8 & 3 (The Conservation Potential Study explicitly states that "all natural conservation has been considered" and correctly defined natural conservation as conservation "which would already occur, even in the absence of DSM programs."); see also Chris Neme's testimony regarding the net-to-gross ratio issue at Transcript vol. 4, p. 69, ln. 20 to p. 73, ln. 15.

[38] Ontario Energy Board, *Letter re Report on the Marginal Abatement Cost Curve*, July 20, 2017.

33. The MACC performs this stated purpose well (i.e. comparing the relative cost-effectiveness of a range of abatement activities). The MACC report shows in a simple chart the cost per tonne of a variety of abatement options, allowing those options to be compared to the cost per tonne of carbon instrument purchases (see p. 18 below).[39] As stated in the Cap and Trade Framework, the utilities should "use the OEB MACC to pace and prioritise their investments."[40] Based on the MACC, that would mean prioritizing investments in industrial and commercial conservation (which the MACC shows to cost between *negative* $80 and $140 per tonne) over other options.

34. The MACC is also intended to establish cost-per-tonne benchmarks to be used to assess the utilities plans.[41] The MACC does this well, clearly indicating costs per tonne for a variety of abatement options.[42] Had the utilities put forward incremental conservation, the cost-per-tonne benchmarks in the MACC would have helped the Board determine whether those measures were as cost-effective as possible.

35. The utilities have treated the MACC as a tool to conclusively determine the conservation savings potential for each abatement option. It is clear form the key regulatory documents that this was never the MACC's purpose:

    a. First, the Cap and Trade Framework does *not* state that the utilities are to use the MACC to determine the conservation potential.[43] Instead, it states that it should be used to "pace and prioritize" investments and for benchmarking.[44] When the Cap and Trade Framework states that it will be the "principal tool" for assessing the utilities' selection of compliance options, this is clearly referring to the prioritization and benchmarking functions that the MACC is meant to play.[45]

    b. Second, the MACC report clearly states, two times, that it uses costs and adoption curves "which reflect business-as-usual (BAU) incentive levels."[46] One cannot

[39] ICF International, *Marginal Abatement Cost Curve*, July 20, 2017 p. 14.
[40] Ontario Energy Board, *Cap and Trade Framework*, September 26, 2016, p. 22 (see also the Filing Guidelines, p. vii, para. 4).
[41] *Ibid.* p. 24-25
[42] *Ibid*. p. 14.
[43] *Ibid*.
[44] *Ibid*. pp. 22 & 24-2.5
[45] *Ibid*. p. 20.
[46] ICF International, *Marginal Abatement Cost Curve*, July 20, 2017 pp. 6 & 19.

estimate incremental conservation potential without considering incremental costs, additional incentives, and improved adoption curves. An analysis based on business-as-usual costs, adoption curves, and incentive levels will provide helpful prioritization and benchmarking information, but clearly cannot determine the conservation potential.

c. Third, the MACC report clearly states, two times, that "the results do not represent the maximum possible abatement that could be achieved."[47] In other words, the results to not describe the conservation potential. This makes the comment about business-as-usual costs, incentive levels, and adoption curves abundantly clear – the MACC is not an assessment of conservation potential. The full statement, which is repeated twice in the MACC report, is quoted in full here:

> The MACC was modelled using costs and adoption curves developed in the 2016 Conservation Potential Study (2016 CPS, see section 1.4.4) which reflect business-as-usual (BAU) incentive levels. The results do not represent the maximum possible abatement that could be achieved through customer abatement, nor the maximum possible costs.[48]

d. Fourth, the utilities themselves found that their own conservation programs under the DSM Framework are achieving more gas savings than what they found in the MACC. The obvious conclusion from such an analysis is that the MACC does not represent the entire potential and is instead a prioritization and benchmarking tool.

e. Fifth, the MACC is based on the Conservation Potential Study, which found large amounts of conservation potential. However, the MACC uses a cost-effectiveness test which generally generates *greater* savings potential. It is absurd to conclude that the MACC was intended to include all cost-effective conservation but is inconsistent with the Conservation Potential Study, particularly as they were both prepared by the same consultants.

36. The MACC results are not a justification for declining to include incremental conservation in the utilities' plans.

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[47] *Ibid.*
[48] *Ibid.*

Climate Change Action Plan is Compatible with Increased Conservation

37. The utilities argue that the Climate Change Action Plan ("CCAP") will crowd out utility conservation programs. Although adjustments may be necessary to coordinate with the CCAP, this is not a justification to implement *no* incremental conservation.

38. The majority of CCAP funding has nothing to do with natural gas conservation. The CCAP includes a detailed breakdown of how the funds will be spent.[49] Only a small portion of those initiatives have the potential to compete with utility-driven conservation efforts. For example, Mr. Neme reviewed the initiatives relating to the industrial sector and found that some have nothing to do with conservation and the ones that could have conservation components are in only two of the many subsectors of the industrial sector.[50]

39. The utilities did not actually assess the impact of CCAP. They did not analyze the initiatives listed in CCAP to determine where they might conflict with utility-run programs. Without this kind of analysis, the utilities cannot rely on CCAP as a blanket excuse not to pursue incremental conservation in any sectors at all whatsoever.

40. Lastly, there is always the possibility that the government will fund new conservation programs. Where that occurs, the utilities may need to adjust. That could mean, at one extreme, cancelling a utility-driven program. That is not a disaster. Furthermore, the risk of that outcome is highly speculative, and cannot justify a decision to forgo all conservation opportunities.

Cap and Trade Cost-Effectiveness Test Generates More Gas Savings

41. The utilities seem to suggest that conservation is available under the DSM Framework but not the Cap and Trade Framework because they use different cost-effectiveness tests. This analysis is completely backwards. The cost-effectiveness test under the Cap and Trade Framework (the UCT/PAC) generally generates *more* savings potential in comparison to the test under the DSM Framework (the TRC).[51]

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[49] Government of Ontario, *Climate Change Action Plan*, pp. 60 to 85 (Enbridge Exhibit J3.8).
[50] Transcript vol. 4, p. 94, lns. 6 to 28.
[51] Evidence of Chris Neme, March 19, 2018, Exhibit L, p. 25

42. Enbridge's 2015 DSM plan provides a concrete example of the UCT/PAC versus the TRC. Under the UCT/PAC, Enbridge's commercial programs are more than three times as cost-effective (TRC Plus ratio of 3.39 vs. UCT/PAC ratio of 10.78) and its industrial programs are more than twice as cost effective (TRC Plus ratio of 6.15 vs. UCT/PAC ratio of 15.45).[52] Similarly, Enbridge's 2018 DSM programs are forecast to provide more net benefits under the UCT/PAC versus the TRC.[53]

43. The UCT/PAC generates more gas savings primarily because it will not screen out conservation measures that customers implement in part for reasons other than gas savings. For example, a customer may replace their windows in part to increase comfort and improve a home's appearance. The UCT excludes voluntary customer participant investments in conservation measures, which allows certain measures to be considered to be cost-effective where customers invest in upgrades to obtain other benefits. Stated differently, the UCT/PAC excludes the voluntary customer investments because it assumes that the customer is best placed to decide whether those investments are worthwhile.[54]

Carbon-Cost-Driven Conservation Not More Risky

44. Lastly, the utilities seem to suggest that conservation driven by carbon costs involves additional risks because carbon instruments must be purchased if the conservation targets are not met. This argument has no merit.

45. Conservation programs may underperform whether they are under the DSM Framework or the Cap and Trade Framework. If targets are not reached, forecast benefits will not materialize or be less than predicted. The risk of missing targets and losing benefits is the same regardless of whether the conservation is driven by either framework.

46. Furthermore, additional carbon instruments must be purchased if any kind of conservation underperforms. The gas volume forecasts used in the cap and trade plans account for expected savings from conservation under the DSM Framework.

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[52] *Ibid.*
[53] Enbridge Exhibit JT2.4.
[54] Transcript vol. 3, p. 145, lns. 11-15.

Underperforming conservation programs will result in higher-than-expected instrument purchases no matter what framework the programs are under.

47. Similarly, the risk that conservation targets will not be met is akin to the risk that winter will be colder than average. Additional carbon instruments can and will be purchased.

48. Indeed, carbon costs justify *more* aggressive conservation programs because conservation acts as a carbon price hedge (see paras. 12 & 17 to 19 above).

Undermining Cap and Trade Legislation and the Board's Framework

49. The utilities have made it clear that they have no intention to implement incremental ratepayer-funded conservation this year and for the next two years.[55] This would mean that there is no incremental conservation for the entire 4-year period covered by the Cap and Trade Framework. This undermines both the purposes of the cap and trade legislation and the Board's Cap and Trade Framework.

Climate Change Mitigation and Low-carbon Economy Act

50. By failing to implement cost-effective conservation, the utilities are undermining the purpose of Ontario's cap and trade legislation. The purpose of the *Climate Change Mitigation and Low-carbon Economy Act* is as follows:

> 2 (1) Recognizing the critical environmental and economic challenge of climate change that is facing the global community, the purpose of this Act is to create a regulatory scheme,
>
> (a) to reduce greenhouse gas in order to respond to climate change, to protect the environment and to assist Ontarians to transition to a low-carbon economy; and
>
> (b) to enable Ontario to collaborate and coordinate its actions with similar actions in other jurisdictions in order to ensure the efficacy of its regulatory scheme in the context of a broader international effort to respond to climate change.
>
> (2) The cap and trade program is a market mechanism established under this Act that is intended to encourage Ontarians to change their behaviour by influencing their economic decisions that directly or indirectly contribute to the emission of greenhouse gas.[56]

51. The cap and trade regime uses price signals to encourage the implementation of the least-cost carbon reductions. The utilities are short-circuiting these signals by failing to

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[55] EB-2017-0244/0255 Transcript Vol. 2, p. 95, ln. 22 to p. 96, ln. 6; Exhibit B.GEC.22, p. 2; Exhibit I.1.EGDI.OSEA.11; Union Correspondence to the Board Dated May 16, 2018; Enbridge Correspondence to the Board Dated May 18, 2018.

[56] *Climate Change Mitigation and Low-carbon Economy Act, 2016*, S.O. 2016, c. 7, p. 2

implement cost-effective conservation that is less expensive than purchasing carbon instruments. This undermines the entire purpose of these price signals.

52. Natural Gas accounts for approximately 30% of the emissions covered by cap and trade.[57] This huge sector cannot continue along with business-as-usual. If cost-effective conservation opportunities continue to be lost, other, more expensive measures will be pursued, increasing the price of carbon and harming everyone.

53. As it stands now, carbon price signals are being completely ignored in the natural gas conservation sector. It is the Board's role as an economic regulator to ensure those signals get through.

The Cap and Trade Framework

54. The utilities' plans to not satisfy the requirements of the Cap and Trade Framework. The Framework requires the utilities to undertake a robust optimization analysis to ensure that their plans are as "as cost-effective as possible" and effectively mitigate risk.[58] The utilities must consider the full range of compliance options, including a consideration of abatement versus instrument purchases. This was not done because abatement was unreasonably ruled out.

55. Contrary to some suggestions by Enbridge, the $2/customer budget cap under the DSM Framework does not rule out incremental conservation. Conservation under the Cap and Trade Framework is clearly *incremental* to conservation under the DSM Framework. The Board explicitly and unambiguously stated this four times in the Cap and Trade Framework and Filing Guidelines.[59]

56. The problem lies not only in the incorrect conclusions reached by the utilities, but in their lack of analysis. In essence, their review of abatement was far too cursory to satisfy the Board's requirement for a robust optimization exercise. As detailed by Chris Neme, the

[57] Government of Ontario, *Climate Change Action Plan*, pp. 60 to 85 (Enbridge Exhibit J3.8); Union Exhibit B.ED.29; Note: natural gas accounts for approximately 24% of Ontario's total emissions and approximately 82% of Ontario's emissions are capped under cap and trade.
[58] OEB, *Regulatory Framework for the Assessment of Costs of Natural Gas Utilities' Cap and Trade Activities*, September 26, 2016, p. 21.
[59] *Ibid.*, p. 23, appendix A: v, and vii.

utilities' analyses were "extremely limited" and "fraught with errors and misleading omissions."[60]

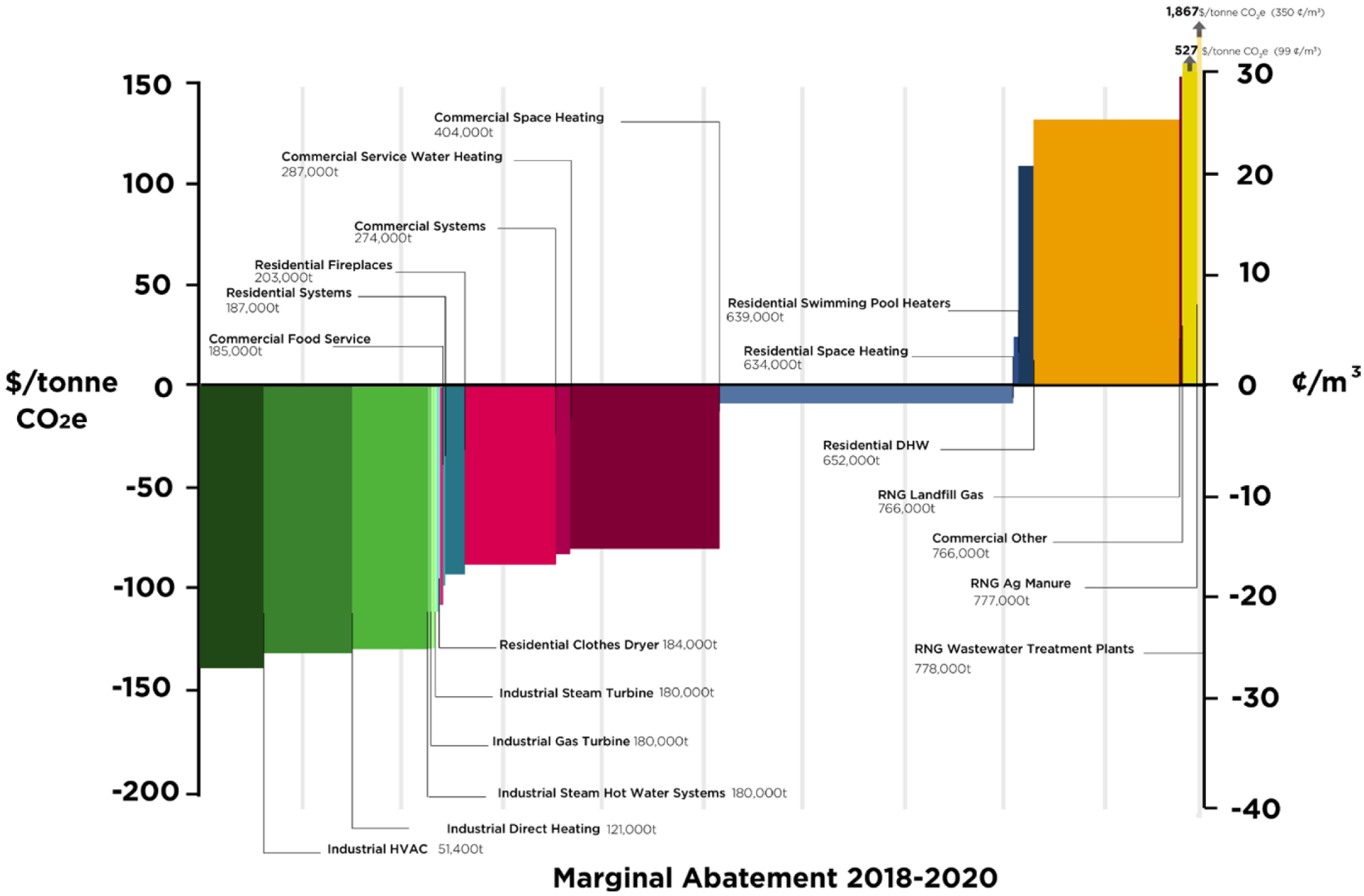
57. It is not clear why the utilities conducted such limited and misleading analyses regarding conservation and the Board need not determine the motivation behind this. However, it is concerning that Enbridge is actively opposing efforts to update the MACC as part of the ongoing 2019 Conservation Achievable Potential Study process.[61] This suggests a desire to maintain the status quo level of conservation.

58. It is also concerning that the utilities have not pursued conservation as vigorously as they have pursued RNG, despite the former being far more cost-effective. RNG reduces the carbon content of gas whereas conservation reduces gas volumes. As a result, only conservation can reduce utility profits by reducing the need for supply-side investments that generate rate base. Perhaps the utilities are concerned that carbon-cost-driven abatement will not involve adequate incentives to address this issue. Environmental Defence believes the utilities should be incentivized to put forward all cost-effective conservation, including carbon-cost-driven conservation. A Board order may also be required. The utilities' current positions may be the result of uncertainties around incentives and the lack of a Board order.

59. Although the utilities say that they are following the MACC, that is not the case. The MACC shows how incredibly cost effective conservation is, including industrial HVAC programs that cost *negative* $140 per tonne.[62] The MACC is for the prioritization of abatement options but has not be used for that stated purpose. They key figure from the MACC report showing that conservation is highly cost-effective is excerpted on the following page.

[60] Evidence of Chris Neme, March 19, 2018, Exhibit L, p. 6 – 7 & 13 – 23.
[61] Enbridge Gas, *2019 Conservation Achievable Potential Study, Written Comments*, p. 3 ("Enbridge does not support that a Marginal Abatement Cost Curve (MACC) be included as part of the scope of work, and strongly argues that this task be completely removed from the Study.") http://www.ieso.ca/-/media/files/ieso/document-library/engage/aps/aps-20180328-enbridge.pdf?la=en.
[62] ICF International, *Marginal Abatement Cost Curve*, July 20, 2017 p. 14.

Exhibit 3 Summary MACC Including Customer Conservation Measures and RNG Potential for Mid-Range LTCPF



60. As a result of the utilities' flawed and extremely limited optimization analysis, their plans do not meet the Cap and Trade Framework's central cost-effectiveness and risk mitigation requirements.

Remedy

61. Environmental Defence requests that the Board (a) disallow a portion of the utilities' cap and trade compliance costs and (b) direct the utilities to include incremental cost-effective abatement in their 2019 plans abased on a robust consideration of comparative costs and benefits. These orders are needed to ensure that the utilities do not undermine the cap and trade legislation and the Board's Cap and Trade Framework by continuing to exclude incremental abatement in 2019 and 2020.

62. As disallowance of some amount of costs is warranted because those costs are not reasonable or prudent. In particular, the utilities have not selected the most cost-effective compliance options, resulting in approximately $36 million in unnecessary net costs to consumers (see paras. 14 to 22 above).

63. A direction regarding the 2019 plans is warranted because the utilities have stated that they will not be implementing conservation in 2019 or 2020 without further direction from the Board. This Board Panel is empowered to provide such direction under s. 36(4) of the *Ontario Energy Board Act*, which allows conditions to be included Board orders.[63]

64. In its 2017 decision on the utilities' cap and trade compliance plans, the Board expressly encouraged the utilities to give further consideration to abatement options for inclusion in future compliance plans.[64] The utilities responded to that direction with analyses that, in Chris Neme's professional opinion, were "extremely limited" and "fraught with errors and misleading omissions."[65] Further orders are required to ensure that the utilities act in the interest of their consumers by putting forward the most cost-effective and least risky plans.[66]

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[63] *Ontario Energy Board Act*, 1998, S.O. 1998, c. 15, Sched. B, p. 36(4).
[64] Ontario Energy Board, *Decision and Order in EB-2016-0296/0300/0330*, September 21, 2017, p. 27.
[65] Evidence of Chris Neme, March 19, 2018, Exhibit L, p. 6 – 7 & 13 – 23.
[66] Union Ex. 7-1-1, p. 1 & Ex. 3-5, p. 4 [$283 million]; Enbridge Ex. G-1-1, att. 1, p. 1-2 & Ex. D-1-1, p. 1 [$385 million]; For confirmation of these figures see: Transcript vol. 2, p. 58, lns. 2-8; Transcript vol. 3, p. 147, lns. 12-16.

Request for Preliminary Ruling re Abatement

65. For the reasons outlined in our letter to the Board dated May 9, 2018, Environmental Defence requests a preliminary ruling on issues associated with incremental abatement. An early and preliminary decision is required for the utilities to react to that decision, and if appropriate, to put together plans and evidence for incremental conservation for 2019. As detailed in our letter of May 9, 2018, without direction very soon, the opportunity to reduce gas bills through cost-effective conservation driven by carbon costs in 2019 will be lost. This would deny the Board and the parties the opportunity to even debate whether such conservation is appropriate and what it should entail.

All of which is respectfully submitted this 31st day of May, 2018.

Kent Elson

ELSON ADVOCACY
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